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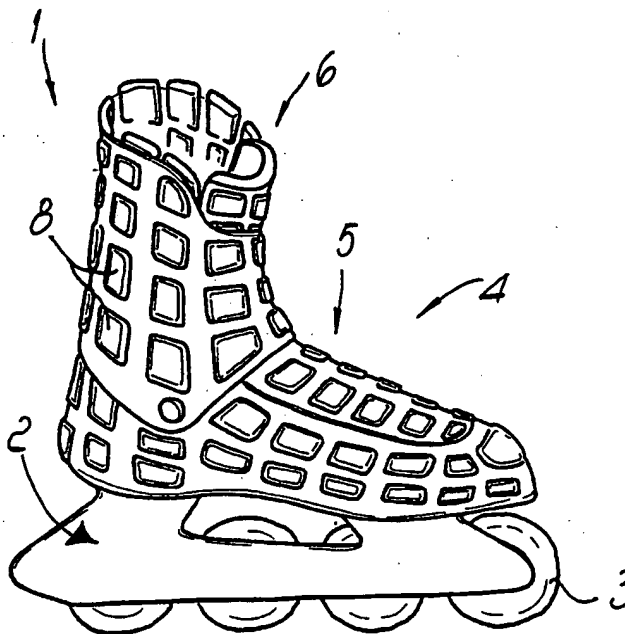
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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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<p>(21) International Application Number: PCT/EP93/02432 (22) International Filing Date: 8 September 1993 (08.09.93)  (30) Priority data: TV92A000104 23 September 1992 (23.09.92) IT  (71) Applicant (for all designated States except US): NORDICA S.p.A. [IT/IT]; Via Piave, 33, I-31044 Montebelluna (IT).  (72) Inventor; and (75) Inventor/Applicant (for US only): POZZOBON, Alessandro [IT/IT]; Via Ruga, 15, I-31050 Paderno di Ponzano Veneto (IT).  (74) Agent: MODIANO, Guido; Modiano, Josif, Pisanty &amp; Staub, Via Meravigli, 16, I-20123 Milan (IT).</p>		<p>(81) Designated States: CA, JP, US, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).  <b>Published</b> <i>With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i></p>

(54) Title: SPORTS SHOE, PARTICULARLY FOR SKATES



(57) Abstract

A ventilated sports shoe, particularly usable for skates which are constituted by a frame (2) for supporting two or more wheels (3) and the shoe (4). The shoe (4) has a plurality of through seats (7) and a plurality of soft pads (8) can be arranged within the seats and protrude inside the shoe, so as to constituted a soft protective region for the user's foot and leg as well as a channel for the air inside the shoe.

## SPORTS SHOE, PARTICULARLY FOR SKATES

Technical Field

The present invention relates to a sports shoe, particularly for skates.

Background Art

Conventional skates, for example of the type with two or more aligned wheels, are essentially constituted by a shoe associated with a wheel supporting frame.

The shoe, or boot, is generally constituted by a quarter articulated to a shell and is usually made of plastics.

An innerboot can be arranged inside the shell and the quarter, and constitutes a padding element to improve the user's comfort.

These conventional skates have the drawback that they do not allow a transpiration, because the foot is enclosed within a substantially tight container, so as to cause considerable sweating during the use of the skate.

This drawback is strongly felt by the users, since this sport is predominantly practiced in summer.

As a partial solution to this drawback, a skate with aligned wheels is commercially known and comprises a plurality of internal ventilation openings.

However, in this type of skate it is necessary to use an innerboot made of transpiring fabric in order to allow adequate ventilation.

Even this solution has drawbacks, since in any case the air does not optimally flow inside the sports shoe, thus limiting beneficial effects for the user.

Furthermore, the openings have fixed arrangements and

sizes and therefore the user is not able to vary the degree of ventilation flow according to his own specific requirements, which are due to the different types of sweating of different individuals, to the different types of use of the skate, and to the particular season in which the skate is used.

#### Disclosure of the Invention

The aim of the present invention is to overcome the drawbacks described above in conventional skates by providing a sports shoe which allows optimum ventilation of the user's foot.

Within the scope of the above aim, an important object is to provide a sports shoe in which the user can select the degree of ventilation according to his own specific requirements or according to requirements related to the particular season in which it is used or to the particular type of use of the skate (slalom or speed skating).

Another important object is to provide a sports shoe wherein optimum comfort for the user can be achieved together with optimum ventilation.

Another important object is to provide a sports shoe in which ventilation can affect one or more parts of the foot and of the user's leg, said user being able to preset and vary these regions.

Another object is to provide a ventilated sports shoe having low manufacturing costs, and which is structurally simple and easy to industrialize.

This aim, these objects and others which will become apparent hereinafter are achieved by a sports shoe particularly for skates, characterized in that it comprises

a plurality of through seats for engaging a plurality of pads which protrude at least inside said shoe.

Brief description of the drawings

Further characteristics and advantages of the present invention will become apparent from the detailed  
5 description of a particular but not exclusive embodiment thereof, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

figure 1 is a side view of the sports shoe according to the present invention;

10 figure 2 is a lateral perspective view of the quarter of the shoe;

figure 3 is a detail view of the internal lateral surface of the shoe;

15 figures 4 and 5 are cross section views of the shoe, illustrating the shape of the through seats of the pads associable thereat, according to two different embodiments of the invention;

figure 6 is a side view of a shoe according to a further aspect of the invention.

Ways of carrying out the invention

20 With reference to the above figures, the reference numeral 1 designates a skate which comprises a frame 2 for supporting two or more mutually aligned wheels 3 and a shoe, or boot, 4.

The shoe is constituted by a quarter 6 articulated to  
25 a shell 5.

A plurality of through seats 7 is formed both at the quarter 6 and at the shell 5.

One or more pads, designated by the reference numeral

8, can be arranged at one or more of said seats 7. The pads are made of soft material and protrude at least inside the internal lateral surface 9 of the shell 5 and of the quarter 6, so as to constitute the internal padding for the shoe 4.

As an alternative, the pads 8 may be associated at the seats 7 by molding.

Their position is thus fixed and defined during design.

The pads 8 may have a plurality of holes 10 connected to the seats 7, so as to allow the flow of air in and out of the shell and the quarter.

Optionally, the pads 8 may be detachable by means of adapted elastically deformable wings 11 which engage the edges 12 of the seats 7 in a snap-together manner.

As an alternative, as shown in figure 5, the pads 8 may be perimetrically provided with an annular groove 13 for engaging tabs 14 which protrude from the perimetric edges 12 of the seats 7.

A channel 15 for the circulation of air inside the shoe 4 is thus formed between a plurality of mutually adjacent pads 8.

The present invention allows the user to arrange the pads 8 at the desired seat 7, formed on the shell 5 or on the quarter 6, for example so as to select the points where air intakes from outside have to be provided, and this is done according to the type of sport to be practiced and to the season in which said practice occurs, as well as according to the individual transpiration characteristics of the foot.

Furthermore, the air flow inside the shoe can be throttled by using pads 8 having holes 10 so as to create regions having a different amount of air inflow.

Furthermore, since the pads 8 protrude inside the  
5 internal lateral surface 9 of the quarter 6 and of the shell 5, on one hand they form the padding for the item of footgear, thus no longer requiring the use of an adapted innerboot, and on the other hand they define a channel 15  
10 which allows the optimum outflow or inflow of air while maintaining optimum comfort for the user.

Figure 6 illustrate a sports shoe 104, according to a further aspect of the invention, comprising a quarter 106 articulated to a shell 105.

The shoe 104 comprises a plurality of through seats  
15 107 adapted to engage a plurality of pads 108, substantially as described above.

In this case however, the number of seats 107 is reduced with respect to the number of seats 7 of the above described shoe 4.

20 The number of internal pads 108 is even lesser and each pad 108 engages more than one seat 107, as clearly illustrated in figure 6. This embodiment has the advantage of reducing the time for assembling the pads both at the production stage and for the user.

25 It has thus been observed that the invention has achieved the intended aim and objects, a sports shoe having been provided in which it is possible to obtain an optimum internal ventilation, and this is provided in a manner which is customized according to the specific requirements  
30 of the user or according to the sport practiced or to

weather conditions.

It is also possible to select regions of higher or lower air inflow or outflow and, by means of the channels 15 and, optionally, of the holes 10 formed on the pads 8, to facilitate the air flow where it is mostly required.

All this allows optimum foot transpiration, thus improving user comfort.

Furthermore, the structure allows to eliminate the innerboot, thus reducing the manufacturing and assembly costs of the sports shoe.

The sports shoe according to the invention is naturally susceptible to numerous modifications and variations, all of which are within the scope of the same inventive concept.

The dimensions and the materials which constitute the individual components of the shoe may also be the most pertinent according to the specific requirements.

Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the scope of each element identified by way of example by such reference signs.



CLAIMS

1           1. Sports shoe particularly for skates, characterized  
2     in that it comprises a plurality of through seats (7,107)  
3     for engaging a plurality of pads (8,108) which protrude at  
4     least inside said shoe.

1           2. Sports shoe according to claim 1, characterized in  
2     that said pads are detachably associated with said seats.

1           3. Sports shoe according to claim 1, characterized in  
2     that said pads are associated at said seats by molding.

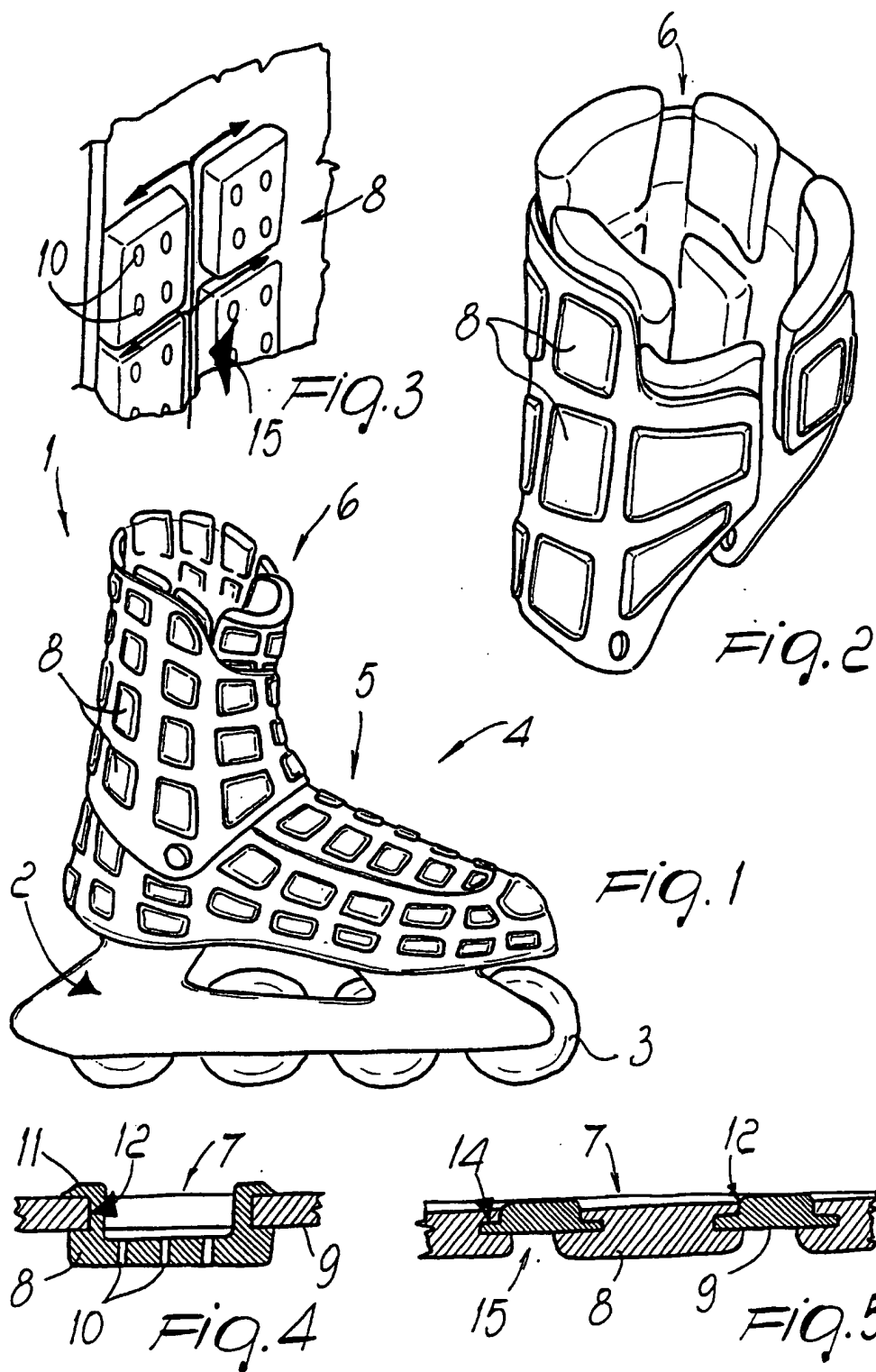
1           4. Sports shoe according to one or more of the  
2     preceding claims, characterized in that holes (10) are  
3     formed in said pads.

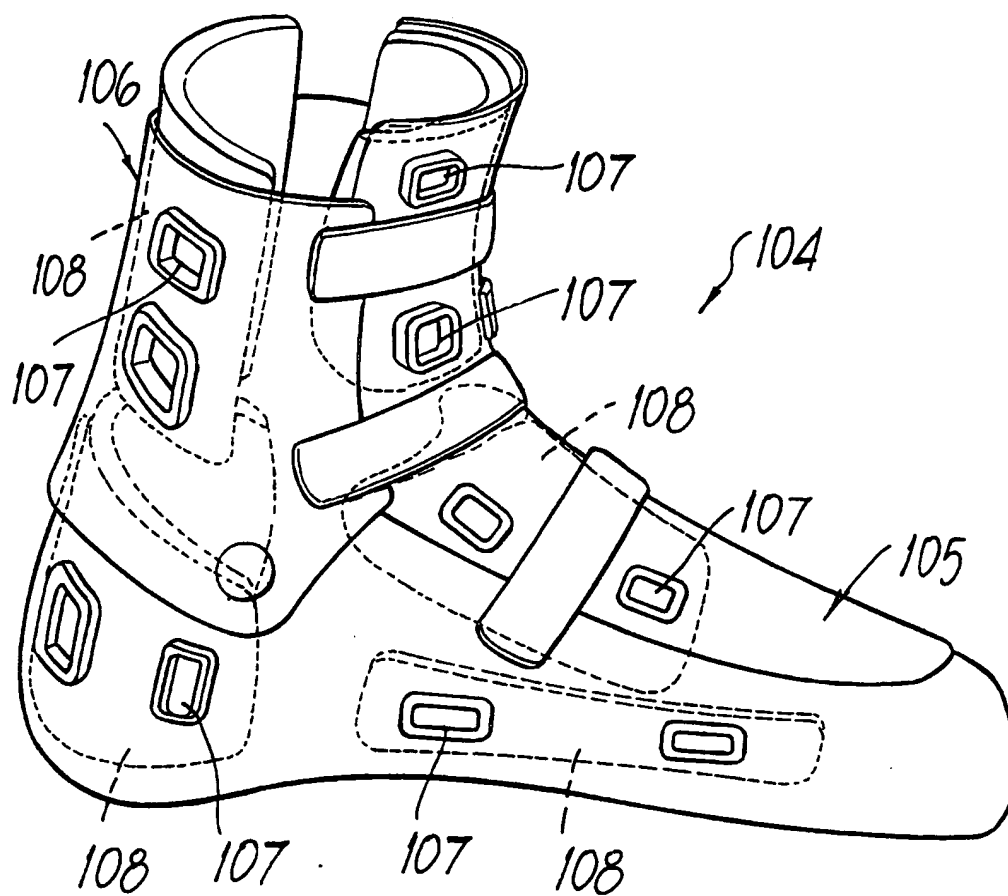
1           5. Sports shoe according to claim 2, characterized in  
2     that said pads have elastically deformable wings (11)  
3     adapted to engage the edges (12) of said seats in a snap-  
4     together manner.

1           6. Sports shoe according to claim 2, characterized in  
2     that said pads are perimetrically provided with an annular  
3     groove (13) adapted to engage tabs (14) protruding from  
4     the edges of said seats.

1           7. Sports shoe according to one or more of the  
2     preceding claims, characterized in that a channel (13) for  
3     air circulation inside said shoe is formed between adjacent  
4     pads (8).

1           8. Sports shoe, according to claim 1, characterized in  
2     that each of said pads (108) engages more than one of said  
3     seats (107).



*Fig. 6*

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/EP 93/02432

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 5 A43B5/04 A43B5/00 A43B5/16 A43B19/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 5 A43B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US,A,4 724 627 (H. SISCO) 16 February 1988 see the whole document ---	1
A	CH,A,626 793 (RAICHLE) 15 December 1981 see the whole document -----	1

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

## \* Special categories of cited documents :

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Date of the actual completion of the international search

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/EP 93/02432

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US-A-4724627	16-02-88	EP-A- 0358639 WO-A- 8906916	21-03-90 10-08-89
CH-A-626793	15-12-81	NONE	